

PSYC G4480y – Psychobiology of Infant Development (seminar)

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The reading list and weekly syllabus – subject to revision

All readings are available online through <http://courseworks.columbia.edu>.

January 19th

Course overview, requirements, and summary of weekly readings*

January 26

Fetal ontogeny: early brain development

Reading Assignment:

Moon, CM and Fifer, WP. Introduction to Developmental Psychology, Slater and Bremner Eds. Chapter 2. Prenatal Development (2015);122-147.

February 2

Fetal environment: early effects of maternal exposures during pregnancy

Reading Assignments:

Connors, SL., Levitt, P., Matthews, SG., Slotkin, TA., Johnston, MV., Kinney, HC., Johnson, WG., Dailey, RM., Zimmerman, AW. Fetal mechanisms in neurodevelopmental disorders. *Pediatric Neurology*, 2008;38:163-176.

Einarson, A., Riordan, S. Smoking in pregnancy and lactation: A review of risks and cessation strategies. *European Journal of Clinical Pharmacology*, 2009;65: 325-330.

Hobel, CJ., Goldstein, A., Barrett, ES., Psychosocial Stress and Pregnancy Outcomes. *Clinical Obstetrics and Gynecology*, 2008;51(2):333-348.

February 9

Fetal programming: long term effects of prenatal exposures

Reading Assignments:

Power, C., Kuh, H and Morton, S. From developmental Origins of adult disease to life course research on adult disease and aging: Insights from birth cohort studies. *Annual Review of Public Health*. 2013; 34:7-28.

Susser, E., St. Clair, D., He, L. Latent effects of prenatal malnutrition on adult health: The example of schizophrenia. *Annals of New York Academy of Sciences*, 2008;(1136):185-192.

Sandman, CA., Glynn, LM., Davis, EP. Is there a viability-vulnerability tradeoff? Sex differences in fetal programming. *Psychosomatic Research*, 2013, Oct;75(4):327-35

February 16

Premature birth: causes, altered early brain development, and long-term outcome

Reading Assignments:

Arpino, C., Compagnone, E., Montanaro, ML., Cacciatore, D., De Luca, A., Cerulli, A., Di Girolamo, S., Curatolo, P. Preterm birth and neurodevelopmental outcome: A review. *Childs Nerv Syst*, 2010 Mar;26:1139–1149

Simmons et al. Preventing preterm birth and neonatal mortality: Exploring the epidemiology, causes, and interventions. *Seminars in Perinatology*, 2010 34:408-415.

Noble, KG., Fifer, WP., Raugh, VA., Nomura, Y. and Andrews, HF. Academic achievement with gestational age among children born at term. *Pediatrics*, 2012 Jul;30(2): 257-264.

February 23

Full-term newborn: perceptual and cognitive abilities

Reading Assignments:

Fifer, WP., Grieve, PG., Grose-Fifer, J., Isler, JR., Byrd, D. High-Density electroencephalogram monitoring in the neonate. *Clinics in Perinatology*, 2006;33: 679-691.

Fifer WP, Byrd DL, Kaku M, Eigsti IM, Isler JR, Grose-Fifer J, Tarullo AR, Balsam PD. Newborn infants learn during sleep. *Proc Natl Acad Sci U S A*. 2010 1;107(22):10320-3.

Nagy, E. The newborn infant: a missing stage in developmental psychology. *Infant and Child Development*, 2010: 20,1: 3-19.

March 1

Sudden Infant Death: causes, prediction and prevention

Reading Assignments:

Fifer, W., Ten Fingers, S., Youngman, M., Gomez-Gribben, E., Myers, M. Effects of alcohol and smoking during pregnancy on infant autonomic control. *Developmental Psychobiology*, 2009;(51):234-242.

Kinney, H., Brainstem mechanisms underlying the Sudden Infant Death Syndrome: Evidence from human pathologic studies. *Developmental Psychobiology*, 2009;1-11.

Mitchell, E. What is the mechanism of SIDS? Clues from epidemiology. *Developmental Psychobiology*, 2009;1-8.

Myers, M. Sudden Infant Death Syndrome: A developmental psychobiologist's perspective. *Developmental Psychobiology*, 2009;1-2., 2010.

March 8

Language Development

Guest Speaker: Natalie Brito, PhD.

Reading Assignments:

Dehaene-Lambertz, Ghislaine; Hertz-Pannier, Lucie and Dubois, Jessica. Nature and nurture in language acquisition: anatomical and functional brain-imaging studies in infants. *TRENDS in Neurosciences*, 2006; 367-373.

Costa, A and Sebastian-Galles, N. How does the Bilingual experience sculpt the brain? *Nature Reviews: Neuroscience*, 2014; 15: 336-345.

Moon, Christine. The Role of Early Auditory Development in Attachment and Communication. *Clinics In Perinatology*, 2011; 657-669.

March 15

Spring Break - No Class

March 22

Early Development of emotional regulation

Guest Speaker: Nina Burtchen MD, PhD, MSc

Reading Assignments:

Feldman R, Granat A, Pariente C, Kanety H, Kuint J, Gilboa-Schechtman E. Maternal depression and anxiety across the postpartum year and infant social engagement, fear regulation, and stress reactivity. *J Am Acad Child Adolesc Psychiatry*. 2009 Sep;48(9):919-27.

Ruth Feldman. Parent-infant synchrony and the construction of shared timing; physiological precursors, developmental outcomes, and risk conditions. *Journal of Child Psychology and Psychiatry* 48:3/4 (2007), pp 329-354.

Shir, A, Hendler, T, Zagoory-Sharon, O, Winetraub, Y, Feldman, R. Synchrony and specificity in the maternal and paternal brain: Relations to oxytocin and vasopressin. *J Am Acad Child Adolesc Psychiatry*. 2012 Aug; 51 (8): 798-811.

March 29

Sleep in Infancy

Reading Assignments:

Hill, C., Hogan, A., Karmiloff-Smith, A. To sleep, perchance to enrich learning? *Archives of Disease in Childhood*, 2007;(92):637-643.

Tarullo, A., Balsam, P., Fifer, W. Sleep and infant learning. *Infant and Child Development*, 2010.

Sigman M, Peña M, Goldin AP, Ribeiro S. Neuroscience and education: prime time to build the bridge. *Nat Neurosci*. 2014 Apr;17(4):497-502.

April 5

Attention and Memory Development and Assessment

Reading Assignments:

Morgan, K. and Hayne, H. Age-related changes in visual recognition memory during infancy and early childhood. *Developmental Psychobiology*, 2010;1-9

Richards, John E. Reynolds, Greg D. and Courage, Mary L. The Neural Bases of Infant Attention. *Current Directions in Psychological Science* 2010; 19: 41-6.

Mead Johnson White paper on Infant Toddler Assessment. 1-28

April 12

Student presentations and discussions

April 19

Student presentations and discussions

April 26

Student presentations and discussions

May 3

Final Papers Due

Course Requirements and Grading

Your final grade will be based on:

Weekly written assignments	30%
Class participation	30%
Final paper and presentation	40%

Weekly Written Assignments

Readings will be posted on CourseWorks and written assignments based on these readings are due every Monday (via email).

Final Paper and presentation

Your final paper will be a research proposal in the form of a mini-grant application.

- Topic title due - 3/29

Send me a tentative title for your paper and a one paragraph abstract.

- * Presentation due 4/12/, 4/19, or 4/26

Give a 8-10 minute PowerPoint presentations of paper outline to class.

(Recommended 6-8 slides)

- Paper due - 5/3

12-15 pages, excluding references. Sample outline on CourseWorks.